

selecting in the scanner image a CT interval of gray wherein each pixel of the scanner image having a gray level lying within the CT interval is replaced by a pixel obtained by digital processing of the pixel of the same coordinates as the MRI image, the final image corresponding to the scanner image in which the pixels of gray levels lying within the CT interval are thus modified.

sub 617 12. The method according to claim 11, wherein a two-dimensional recentering of both MRI and scanner images is carried out by means of at least one rotation and/or translation operation, so that a pixel of the scanner image of coordinates (x,y) and a pixel of the MRI image of the same coordinates (x,y) represent the same portion of the organ X-rayed.

13. The method according to claim 11 wherein the upper limit  $B_{CT}$  of the CT interval is fixed at a gray level value on the Hounsfield scale, the gray level corresponding to the highest value of the gray levels representing the soft tissues visualized on the scanner image.

14. The method according to claim 12 wherein the upper limit  $B_{CT}$  of the CT interval is fixed at a gray level value on the Hounsfield scale, the gray level corresponding to the highest value of the gray levels representing the soft tissues visualized on the scanner image.

15. The method according to claim 11 wherein the lower limit  $A_{CT}$  of the CT interval is fixed at a gray level value on the Hounsfield scale, the gray level corresponding to the lowest value of the gray levels representing soft tissues visualized on the scanner image.

16. The method according to claim 12 wherein the lower limit  $A_{CT}$  of the CT interval is fixed at a gray level value on the Hounsfield scale, the gray level corresponding to the lowest value of the gray levels representing soft tissues visualized on the scanner image.

17. The method according to claim 13 wherein the lower limit  $A_{CT}$  of the CT interval is fixed at a gray level value on the Hounsfield scale, the gray level corresponding to the lowest value of the gray levels representing soft tissues visualized on the scanner image.

18. The method according to claim 14 wherein the lower limit  $A_{CT}$  of the CT interval is fixed at a gray level value on the Hounsfield scale, the gray level corresponding to the lowest value of the gray levels representing soft tissues visualized on the scanner image.

19. The method according to claim 11 wherein one selects another MR interval of gray levels in the MRI image, whose upper limit  $B_{MR}$  corresponds to a gray level above which the pixels are white.

20. The method according to claim 19 wherein the lower limit  $A_{MR}$  of the MR interval corresponds to a gray level below which the pixels are black.

21. The method according to claim 11 wherein the digital processing consists of a linear interpolation.

22. The method according to claim 21 wherein the linear interpolation introduces an affine function integrating the value of the lower limit  $A_{CT}$  and upper limit  $B_{CT}$  of the CT interval in the scanner image and the value of the lower limit  $A_{MR}$  and upper limit  $B_{MR}$  of the MR interval in the MRI image.

23. The method according to claim 22 wherein a scanner pixel having a gray level  $V_{CT}$  lying within the CT interval, the gray level  $V_{MR}$  of the corresponding pixel in the MRI image is determined, and then a gray level in the CT interval is determined from the affine function and from the level  $V_{MR}$ ; the gray level  $V_{OUT}$  of each pixel of the final image is then obtained by the following algorithm:

- if  $V_{CT} < A_{CT}$ , then

1)  $V_{OUT} = V_{CT}$ ,

- if  $V_{CT} > B_{CT}$ , then

2)  $V_{OUT} = V_{CT}$ ,

- if  $A_{CT} < V_{CT} < B_{CT}$ , then

3)  $V_{OUT} = A_{CT} + (B_{CT} - A_{CT}) (V_{MR} - A_{MR}) / (B_{MR} - A_{MR})$ .